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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/343,334	06/30/99	SKLEDAR G	T-5586CIP

IM52/0910

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EXAMINER	
PREISCH, N	
ART UNIT	**PAPER NUMBER**
1764	13

DATE MAILED: 09/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

1- File Copy

Office Action Summary	Application No. 09/343,334	Applicant(s) SKLEDAR ET AL.	
	Examiner Nadine Preisch	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 8-27-01 has been entered.

Removal of Claim Rejections Under 35 U.S.C. § 112 2nd Paragraph

Applicants' argument filed 8-27-01 are sufficient to overcome the 112 second paragraph rejection over claim 26

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

In claim 25, it is unclear how to produce a composition comprising a highly stable polyalphaolefin and a diphenylene antioxidant when the preparation steps only refer to the presence of a polyalphaolefin. It appears as if the diphenylamine antioxidant has to be added at some point during the process to obtain a final product containing diphenylene antioxidant. It is

suggested that applicants amend the claim to include the addition of the diphenylamine antioxidant.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al.(5,276,227).

Applicants are claiming a high oxidative stability polyalphaolefin which has bromine index of less than 200 mg per 100 gram sample of polyalphaolefin. The dependent claims include limitations directed at narrower Bromine Index ranges.

The reference of Wu et al.(5,276,227) discloses a polyalphaolefin with a Bromine number less than 4 (e.g. 0-4). See column 3, lines 50-51. Since the Bromine Index is equal to 1000 times the Bromine Number, the reference of Wu et al.(5,276,227) succeeds in disclosing a polyalphaolefin with a Bromine Index of 0 to 4000 mg of bromine per 100 g.

Since the teachings of the reference encompass polyalphaolefins with Bromine Index ranges less than 200, applicants' polyalphaolefin product is anticipated by the reference of Wu et al.(5,276,227).

In addition, the intended use limitations in claims 17-24 do not carry patentable weight because they do not further limit the physical structure of the claimed composition. It has been held that a recitation with respect to the manner in which a claimed apparatus (composition) is intended to be employed does not differentiate from a prior art apparatus(composition) that

teaches all the structural limitations. Ex Parte Masham, 2 USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987).

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8, 10-12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer (3,113,167) in view of Wu et al.(5,276,227).

Applicants are claiming a method of making a high oxidative stability polyalphaolefin. The process of making comprises hydrogenating a polyalphaolefin to a level of hydrogenation in which a Bromine Index of less than 200 mg per 100 gram sample of polyalphaolefin is achieved. In the dependent claims, applicants include limitations directed at an additional distilling step and narrower Bromine Index ranges.

The reference of Sauer (3,113,167) discloses a process for the production of polyalphaolefins. See column 7, lines 43-45. The process involves a distillation step followed by a polymer hydrogenation step. See column 8, lines 43-45.

The reference of Sauer (3,113,167) succeeds at disclosing a process for the production of polyalphaolefins with steps corresponding to applicants' claimed initial distillation step and hydrogenation step.

A difference is noted between applicants' process and the teachings of Sauer (3,113,167). The reference is silent about hydrogenating to a Bromine Index less than 200.

The reference of Wu et al.(5,276,227) discloses a polyalphaolefin with a Bromine number less than 4 (e.g. 0-4). See column 3, lines 50-51. Since the Bromine Index is equal to 1000 times the Bromine Number, the reference of Wu et al.(5,276,227) succeeds in disclosing a polyalphaolefin with a Bromine Index of 0 to 4000 mg of bromine per 100 g. The reference further teaches that it is known that products of low unsaturation, as characterized by a low Bromine Number less than 4, have desirable viscosity properties. See column 3, lines 35-65.

Wu et al.(5,276,227) succeeds at disclosing a Bromine Index overlapping that claimed by applicants. In addition, the reference also succeeds in disclosing the concept that products of low unsaturation are desirable.

Since the reference does not limit the Bromine Index of the polyalphaolefin product, it would have been obvious to one of ordinary skill in the art at the time the invention was made to hydrogenate to a low Bromine Index level in the Sauer process, including the Bromine Index range claimed by applicants, because the reference of Wu et al.(5,267,227) illustrates that low Bromine Indexs overlapping those claimed by applicants are desirable.

Claim Rejections - 35 U.S.C. § 103

Claims 1-4, 6-12, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cupples et al.(4,282,392) in view of Wu et al.(5,276,227) .

Applicants are claiming a method of making a high oxidative stability polyalphaolefin. The process of making comprises hydrogenating a polyalphaolefin to a level of hydrogenation in which a Bromine Index of less than 200 mg per 100 gram sample of polyalphaolefin is achieved. In the dependent claims, applicants include limitations directed at an additional distilling step and narrower Bromine Index ranges.

The reference of Cupples et al.(4,282,392) discloses a process for the production of alphaolefin oligomers (e.g. polyalphaolefins). See column 1, lines 11-15. The process involves a hydrogenation step followed by a distillation step. See column 4, lines 4-5 and column 7, lines 20-55. The hydrogenation step is accomplished at pressures between 200 and 2000 psi. See column 4, lines 23-25.

The reference of Cupples et al.(4,282,392) succeeds at disclosing a process for the production of polyalphaolefins with steps corresponding to applicants' claimed hydrogenation and distillation steps.

Several differences are noted between applicants' process and the teachings of Cupples et al.(4,282,392). The reference is silent about hydrogenating to a Bromine Index less than 200. In addition, the reference does not disclose applicants' final hydrogenation step in claim 28.

The reference of Wu et al.(5,276,227) discloses a polyalphaolefin with a Bromine number less than 4 (e.g. 0-4). See column 3, lines 50-51. Since the Bromine Index is equal to 1000 times the Bromine Number, the reference of Wu et al.(5,276,227) succeeds in disclosing a polyalphaolefin with a Bromine Index of 0 to 4000 mg of bromine per 100 g. The reference further teaches that it is known that products of low unsaturation, as characterized by a low Bromine Number less than 4, have desirable properties. See column 3, lines 35-65. It also discloses that a hydrogenation (i.e. saturation) is required if the product has an averaged molecular weight of less than 4000. See column 3, lines 46-55.

Wu et al.(5,276,227) succeeds at disclosing a Bromine Index overlapping that claimed by applicants. In addition, the reference also discloses the concept that products of low unsaturation are desirable.

The reference of Wu et al.(5,276,227) also succeeds in disclosing the concept that hydrogenation is required to obtain a desired level of saturation in alphaolefin oligomers as indicated by a low Bromine Index when the product has a number averaged molecular weight of lower than 4000. The reference's disclosure illustrates that it is within the level of ordinary skill in the art to select whether or not to perform a hydrogenation step to achieve a desired Bromine Index.

Since the reference does not limit the Bromine Index of the polyalphaolefin product, it would have been obvious to one of ordinary skill in the art at the time the invention was made to hydrogenate to a low Bromine Index level in the Cupples et al.(4,282,392) process, including the Bromine Index range claimed by applicants, because the reference of Wu et al.(5,267,227) illustrates that low Bromine Indexs overlapping those claimed by applicants are desirable.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an additional final hydrogenation step in the process of Cupples et al.(4,282,392) if a final product with a number averaged molecular weight of less than 4000 with a correspondingly high Bromine number is obtained because the reference of Wu et al.(5,276,227) illustrates that it is known to perform a hydrogenation step on a polyalphaolefin oligomer with a low molecular weight in order to obtain a desirable lower Bromine Index. Applicants have not shown anything unexpected by performing an additional step which is known to lower the Bromine number and increase the number average molecular weight to a desired level.

Claim Rejections - 35 U.S.C. § 103

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cupples et al.(4,282,392) in view of Wu et al.(5,276,227) as applied to claims 1-4, 6-12, 26 and 28 above and/or claims 1-8, 10-12 and 27 as applied to Sauer (3,113,167) in view of Wu et al.(5,276,227) above, and further in view of Van Dyck Fear (2,980,603).

A difference is noted between the references of Cupples et al.(4,282,392) and/or Sauer (3,113,167) and applicants' claimed invention. The references do not disclose the use of diphenylamine as an antioxidant.

The reference of Van Dyck Fear (2,980,603) teaches that diphenyl amine is a known antioxidant additive for lubricating oil. See column 5, lines 44-46.

It would have been obvious to one of ordinary skill in the art desiring to increase the oxidative stability of the lubricating oil produced by the reference of Cupples et al.(4,282,392) and/or Sauer (3,113,167) to add diphenyl amine to the polyalphaolefin product because the reference of Van Dyck Fear (2,980,603) teaches that it is known in the art to add diphenyl amine in order to increase the oxidative stability. Applicants have not shown anything unexpected with respect to adding a known antioxidant in the form of diphenyl amine to prepare an oxidatively stable composition.

Response to Arguments

Applicants' arguments filed 8-27-01 have been fully considered but they are not persuasive.

Applicants' arguments that the reference of Wu (5,276,227) does not anticipate applicants' invention because it does not disclose a Bromine Index value of 200 or less is not

persuasive in overcoming the rejection. It is maintained that the reference's disclosure of less than 4000 mg per 100g is considered to encompass a Bromine Index of 200 or less.

Applicants' arguments against the reference of Saur (3,113,167) and Cupples et al.(4,282,310) does not disclose applicants' level of hydrogenating to a Bromine Index of less than 200 are addressed in the modified rejection above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Preisch whose telephone number is 703-305-2667. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-5408 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

N.P.
September 7, 2001

NP

NADINE PREISCH
ART UNIT 1764